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Advisor CN
Telecom Regulatory Authority of India,
Mahanagar Doorsanchar Bhavan,
Old Minto Road, Near Zakir Husain College,
New Delhi - 110002.

Subject **Response to TRAI Consultation Paper on "National Broadband Plan"**

Dear Sir,

ISPAI response to the specific questions mentioned in the consultation paper is enclosed herewith.

We sincerely believe that the Authority would consider our responses in the perspective and expect forward-looking recommendations on subject matter.

With best regards,

Yours truly,
for **Internet Service Providers Association of India**

Desi S. Valli
Secretary

Encl : As above

ISPAI Response on TRAI Consultation Paper on National Broadband Plan

The Internet Service Providers Association of India (ISPAI) would like to thank the TRAI for taking up this very important issue in a holistic manner considering that the Broadband performance of the country over the last 6 years has been extremely disappointing. ISPAI has repeatedly raised its concern that despite the availability of over 150 Internet Service Providers there is no genuine competition. Infrastructure is mostly owned by UASL and Incumbent Operators which is not available for ISPs at whole sale prices. The discriminatory policies and prices towards the ISPs have not generated the genuine competition in the ISP sector. Therefore, the kind of growth which should have been seen by the country in the net based services including broadband applications, has not materialized. As part of this preamble we present our analysis which leads to certain pointers based on which the questions raised by TRAI in the Consultation paper have been answered.

The Demand Factor: Demand for a service is hugely dependent on the perceived utility and the cost at which the service is available.

The phenomenal growth of mobile telephony amply proves this point. First came the perception of the utility of mobile phones for business and commerce and then with competition as the tariffs and CPE costs hit the level where the common man found the perceived benefits could be realized in practice (in short from his point of view there was a business case), the demand grew exponentially. In the Broadband services area this has not yet happened and requires to be made to happen.

The lessons learnt during the last six years show that the perceived benefits from applications such as e-commerce (online Banking, bill payment, trading, etc.), air and rail bookings, travel assistance, job search and application for employment are clearly catching up but are currently limited to urban areas due to availability limitations discussed below. The fact that most applications are available in English language only and English proficiency is not high enough has an impact on demand despite perceived benefits. Greater availability of government services on Internet is definitely pushing the perceived benefits of Broadband all round.

Awareness about the utility of Net based applications in particular those requiring large bandwidths, does not come about automatically or as easily as that of simple voice telephony. Concerted efforts to increase awareness through mass media advertisements besides actual exposure to broadband services have to constitute a major component of any effort to boost demand.

The Supply Factor: It is, however, not enough that the perceived benefits of broadband Internet based applications are clear in the minds of potential customers. A convinced would-be customer has to be able to have easy and affordable access to broadband services and the quality of the service and the content accessed as a result have to be such as to ensure he is satisfied with the value for money.

The growth pattern of Broadband over the last six years has shown that DSL on copper pairs (essentially of BSNL and MTNL) is the most popular access method with nearly 86% connections using it. The fact that most of the underground infrastructure is available with these two PSUs and that no Local Loop Unbundling (LLU) has been allowed, BSNL and MTNL

continue to dominate this market. There is no business case for new copper cable to be laid for providing Broadband services. Private telecom operators who have some fixed lines (copper and OFC) in access network, are achieving some success by providing bundled services such as voice, Internet and IPTV, to improve their business case. Their services are however limited to urban areas.

With this kind of strangle-hold of a few operators to access the customer and with the limitation of high cost and Right of Way (ROW) related problems in laying fresh cable network (including by ISPs), competition is non-existent. Our experience in the growth of voice telephony especially wireless based access networks, shows that effective competition is essential ingredient for the growth of demand. The current scenario is that majority of ISPs are not able to contribute their efforts in this national effort to render trade and commerce, education, medical services, etc. because the policies being practised on date far from encouraging them actually prevent ISPs from delivering what they are capable of doing. Rural areas where there is much less infrastructure such as commercial power, poor availability of copper cable/OFC in the access network, larger distances (> 3 Kms) where DSL is unable to give large speeds, inadequate backhaul network and high cost of backhaul bandwidth, etc. hardly contribute to Broadband connections. The other inhibiting factors for rural areas are non-availability of computers, lack of relavent , applications and public utility services language barrier for use of Internet, etc. Lastly creation of a business case is not easy unless substantial reduction in input costs, availability of entertainment based and education related applications of interest to rural areas, etc. materialize. The other alternative would be direct support as part of the universal service programme on the lines of the present arrangement for telephone connections..

COMMENTS ON QUESTIONS RAISED IN THE CONSULTATION PAPER

CHAPTER 2: Broadband – Demand & Supply

5.1 What should be done to increase broadband demand?(Reference Para 2.23)

- Take up specific initiatives for increased **awareness** about the benefits of broadband based Net services through the mass media (including TV and Cinema screens) as also demonstration kiosks at shopping centres and shopping markets.
- Promote use of **intelligent terminals and phones** for Internet access at a cost which is much lower than the cost of a laptop requiring much less commercial power.
- Involve NGOs in the **awareness building** programmes suitably funded by the government.
- Provide ICT literacy which includes **computer and intelligent terminal literacy** through sponsored high quality training facilities in clusters of habitats.
- Promote **lower cost availability** of Net access through policy initiatives which permit operators such as ISPs to have whole sale cost based access to last mile connectivity of customers.
- Promote offering **bundled voice, video and data services** by all operators irrespective of type of license thereby encouraging competition based tariffs for broadband while ensuring business case for all operators.

5.2 What, according to you, will improve the perceived utility of broadband among the masses? (Reference Para 2.23).

- Government sponsored and supported **training (computer literacy) and awareness** programmes to bring home the advantages of broadband through practical demonstration and hands on experience.
- Greater participation of governments at Centre, State and Local Self Government levels in **e-governance** through compulsory offering of all government services for the citizen.
- Promoting **e-education and e-health services through PPP initiatives.**
- Ensuring high **Quality of Service (QOS)** with all broadband services offering to instil confidence in the consumer for value for money.

5.3 What measures should be taken to enhance the availability of useful applications for broadband? (Reference Para 2.23)

- Promoting Region and Area specific applications through cooperation of NGOs and local bodies (for the identification of nature of application), government (for financial support) and private entrepreneurs (for content and programme development).
- NGOs should be used for spreading awareness amongst rural people about various applications and relevant services already available on the Internet. NGOs should also be leveraged in providing necessary training about usage of Internet and computing devices.
- Offering tax holiday for limited but extended period for application developers.
- Offering applications using local language and/or graphics base.
- Offering ready and easy access to application developers to reliable government or other organisation's data bases.

5.4 How can broadband be made more consumer friendly especially to those having limited knowledge of English and computer? (Reference Para 2.23)

- Using available information for local areas through interaction with knowledgable individuals or organisations including NGOs active in the area to identify local needs.
- Developing applications in local language and/or extensive use of graphics.
- Conducting training programmes in the use of computers and intelligent terminals.

5.5 Do you agree with projected broadband growth pattern and futuristic bandwidth requirements? (Reference Para 2.35)

We agree that future planning has to be done on the basis of requirements of large bandwidths in the Access as well as backhaul networks.

5.6 Do you agree that existing telecom infrastructure is inadequate to support broadband demand? If so what actions has to be taken to create an infrastructure capable to support futuristic broadband? (Reference Para 2.35)

- We agree that the current infrastructure is quite inadequate and has to be augmented through extensive deployment of both wireless and optic fibre cable based networks. The paramount need is to establish a highly competitive supply environment which is both technology and service neutral and in which reasonable cost bandwidth is available to all operators including ISPs on a bulk basis.

- Judging by the actions taken by a large number of countries who either have successful broadband programmes or have embarked upon national initiatives to popularize and substantially increase broadband access, there is a need for direct government initiative backed by massive public funding for the development of necessary infrastructure. Funding could come partially from the USO Fund and partly directly from the national budget.

CHAPTER 3: National Broadband Network

5.7 What network topology do you perceive to support high speed broadband using evolving wireless technologies? (Reference Para 3.22)

The network topology will necessarily use both wire-line (optic fibre cable) and wireless systems. For wireless systems the technologies currently available or becoming available are Wimax and LTE.

5.8 What actions are required to ensure optimal utilization of existing copper network used to provide wireline telephone connections? (Reference Para 3.22)

- There is substantial scope for enhancing the suitability of the existing copper network for broadband connections. Owing to the distance limitations as well as quality of existing copper network, it is necessary to extensively deploy optic fibre cables in the access network. This will effectively shorten the distance over which copper line needs to be used in the last mile besides improving the quality of the access network.
- Introducing local loop unbundling to help ISPs and other service providers to have greater access to consumers thereby achieving greater competitive environment.

5.9 Do you see prominent role for fibre based technologies in access network in providing high speed broadband in next 5 years? What should be done to encourage such optical fibre to facilitate high speed broadband penetration? (Reference Para 3.22)

- Yes, most certainly. Wireless access will also play a role since smaller independent operators (such as ISPs)will then get a cheaper and faster means to access consumers for broadband.
- De-licensed 5.1 Ghz to 5.3 Ghz, and sub-3GHz bands such as 450 MHz and 700 MHz

5.10 What changes do you perceive in existing licensing and regulatory framework to encourage Cable TV operators to upgrade their networks to provide broadband? (Reference Para 3.22)

- The key to promoting much greater use of cable network for broadband is to permit VoIP so that a better business case through bundled services option is created.
- QOS requirements for cable networks should be introduced and monitored closely as a regulatory measure.

5.11 Is non-availability of optical fibre from districts/cities to villages one of the bottlenecks for effective backhaul connectivity and impacts roll out of broadband services in rural areas? (Reference Para 3.39)

Yes besides several other factors.

5.12 If so, is there a need to create national optical fibre network extending upto villages? (Reference Para 3.39)

Yes.

5.13 In order to create National optical fibre core network extending upto villages, do you think a specialized agency can leverage on various government schemes as discussed in para B? (Reference Para 3.39)

Yes.

5.14 Among the various options discussed in Para 3.35 to 3.37, what framework do you suggest for National Fibre Agency for creating optical fibre network extending upto village level and why? (Reference Para 3.39)

- Yes. While the day to day operations need to be controlled by a Neutral national agency the overall supervisory, planning and tariffing has to be under the control of such an agency. The agency must have representatives from all the stake holders including Industry, the service providers and government and has to be mostly funded by the government or PPP mode.
- Agency should take the stock of all existing network by the various operators including incumbents across the country. Extra capacity available with Service Providers in different states/region shall be parked with Neutral Agency which should be made available to all the Service Providers on fair and equitable basis even to their own companies which have provided their spare capacity to the Agency. Agency should also be tasked with the moderazation of such capacities for unleashing the potential.

  TRAI should consider "Function Separation as adopted by BT Openreach. Openreach is part of BT Group but it operates as a separate line of business - serving the needs of all Communications Service Providers in a fair, non-discriminatory and arm-length dealing. Details can be find at the following link. ISPAI would like to make a separate presentation on this aspect.

  http://www.expect.openreach.co.uk/faqs.aspx#WhenCreated

5.15 What precautions should be taken while planning and executing such optical fibre network extending upto villages so that such networks can be used as national resource in future? What is suitable time frame to rollout such project? (Reference Para 3.39)

- The key to judging the success of such a network as a national resource to promote broadband access will be the ability of the network to offer adequate and reasonably priced access to bandwidth in the access as well as backhaul network to all operators in an equitable manner. In short, the success of the network as a

national resource will be judged by the creation of a competitive environment for broadband access available at a reasonable input price to all operators. The success aspect is therefore linked more with the streamlined operational aspect more than the mere creation of the network.

CHAPTER 4: Regulatory Challenges and Future Approach

5.16 Is there a need to define fixed and mobile broadband separately? If yes, what should be important considerations for finalizing new definitions? (Reference Para 4.18)

5.17 Is present broadband definition too conservative to support bandwidth intensive applications? If so, what should be the minimum speed of broadband connection? (Reference Para 4.18)

- There are two issues for consideration in the definition of broadband are the aspect of an 'always on' connectivity and the minimum speed which qualifies a connection to be regarded as a broadband connection.
- The first issue of 'always on' connection separate dedicated modem based connections and dialled up connections. In the past when fixed dial-up connections were the prominent mode, higher speeds of the order of 256 kbps were not feasible. Today, with predominance of wireless dial-up connections using advanced 'edge' and 3G and IMT technologies, the requirement of a dedicated modem based connection is not a requirement and wireless dial up connections can give excellent speeds. There is therefore no need to retain the 'always on' component in the broadband definition any longer.
- The second issue of minimum speed is more difficult to handle. Fixed networks based on optic fibre technology are capable of speeds which can not be matched by wireless connections. In addition, in the case of wireless connections, a given BTS defines the total possible speed that can be delivered and depending on the deployed technology it can be several Mbps. However, this bandwidth is shared by a number of subscribers which because of the association of mobility, can not be controlled or restricted. The speed available to a subscriber can be a few Mbps or less than 256 kbps. What services or applications can be supported successfully and with high quality by any network will therefore depend on the customer density in any BTS area. It is therefore possible to have separate definitions for fixed and mobile broadband.
- As for whether the definition of minimum speed should be revised upwards or not, it is evident that the minimum speed of 256 kbps does not preclude provisioning of higher speeds for services which require such higher speeds. For example, corporate networks which need more of large bandwidth applications will always seek and install connections capable of much higher speeds. Similarly, to take several large-bandwidth based applications to rural areas will require higher bandwidths but these, at least initially, can be at locations for public access and not for individual requirements. Since 256 kbps minimum speed is adequate for several common applications, there is no need to revise this value but the networks have to be planned with high bandwidth usage particularly because as the perception of utility of broadband increases, the number of much higher bandwidth connections will increase.

5.18 What specific steps do you feel will ease grant of speedy ROW permission and ensure availability of ROW at affordable cost? (Reference Para 4.30)

No comments at this point of time.

5.19 Does the broadband sector lack competition? If so, how can competition be enhanced in broadband sector? (Reference Para 4.42)

- There is no doubt that there is hardly any competition in the broadband sector. This is clear from the facts that despite being permitted to offer VoIP services, none of the UASL operators are offering this service for fear of impact on their business case disregarding consumer benefits or their own gain through enhanced numbers and usage. Lack of competition is also evident from the fact that the 5 or 6 operators account for most of the broadband connections. This lack of competition is because of two reasons:

    - Access network is controlled by UAS Licencees and there are no regulations to control the monopolistic behaviour of these operators.
    - ISPs are not permitted to offer all services which IP based networks are capable of – in particular, VoIP services.

- TRAI recommendations on Issues related to Internet Telephony dated 18 August 2008 permitting ISPs to offer this service has been rejected by DoT vide its letter dated 2 Feb ’10,

- Large rural population has been deprived of using the cheap Internet Telephony service which could have paved- the- wave for broadband usage in the rural areas.

- Introduce Local Loop Unbundling and introduce regulatory measures for equitable and reasonably priced access to wholesale bandwidth to ISPs in both Access and Backhaul networks.

5.20 Do you think high broadband usage charge is hindrance in growth of broadband? If yes, what steps do you suggest to make it more affordable? (Reference Para 4.42)

5.21 Do you think simple and flat monthly broadband tariff plans will enhance broadband acceptability and usage? (Reference Para 4.42)

5.22 Should broadband tariff be regulated in view of low competition in this sector as present? (Reference Para 4.42)

5.23 What should be the basis for calculation of tariff for broadband, if it is to be regulated? (Reference Para 4.42)

- Due to lack of genuine competition and high backhaul costs, broadband usage charges are high which clearly is a hindrance to its popular adoption.

- Flat broadband tariff plans determined by genuine competition will help. However, these need not be regulated by TRAI. Instead, the market in a genuine competitive mode should determine these. If in the short run a subsidy is felt necessary for rural areas, it should be adopted as a policy matter.

5.24 How can utilization of International Internet bandwidth be made more efficient in present situation? (Reference Para 4.42)

5.25 How can use of domestic and international internet bandwidth be segregated? Will it have direct impact on broadband affordability? If so, quantify the likely impact. (Reference Para 4.42)

5.26 What steps should be taken to bring down the cost of international internet bandwidth in India? (Reference Para 4.48)

5.27 How can competition be enhanced in the International bandwidth sector? (Reference Para 4.48)

Government must address the following important issues :

Local hosting should be promoted

40 bit encryption should looked in to

This issue should be addressed at the earliest. Now-a –days, most of e-commerce website, portal, banking, and insurance sites uses 128 bits or more encryption for ensuring safe online transaction. Accordingly Government should permit usage of encryption upto 128 bit key on the Internet, by suitable amendment / notification to the license conditions and other such notifications if issued.

Permit usage of SSL for encryption without any requirement to deposit key pair (as it is impractical) with the government.

Content Development, Standards & IPR Protection

India having more than 18 official regional languages, requires more and more content in the local languages to enable users to find the relevant information in their respective languages. Broadband infrastructure is meaningless without appropriate content. In this context, UNICODE based fonts for Indian languages and internationalized domain names would provide a major fillip.

However, we also need to give due attention to the rights of the Intellectual Property Holders to ensure that they are well-protected.

5.28 QoS of broadband, availability of bandwidth, adherence to given contention ratio, affordability, availability and spread are some intricately linked parameters. In your opinion what should be done to ensure good quality broadband to subscribers? (Reference Para 4.59)

5.29 Do you think that bad quality of broadband connection is impacting the performance of bandwidth hungry applications and hence crippling the broadband growth? If so, please

suggest remedial actions. (Reference Para 4.59)

5.30 Is there a need to define new/redefine existing quality of service parameters considering future bandwidth hungry applications, time sensitivity of applications and user expectation? What should be such parameters including their suggestive value and should such parameters be mandated? (Reference Para 4.59)

5.31 What measures do you propose to make Customer Premises Equipment affordable for common masses? Elaborate your reply giving various options. (Reference Para 4.64)

- CPE cost constitutes a major entry barrier for increased demand for broadband services. One possible method to reduce these costs would be to promote the use of intelligent terminals. Given adequate demand and adequate supplies, the price of the basic CPE can be reduced.
- To encourage spending on laptops or notebooks or intelligent terminals i.e. a CPE capable of being used for broadband access, income tax relief could be considered by the government.

5.32 What measures are required to encourage development of content in Indian vernacular languages? (Reference Para 4.68)

- The issue really is how to popularize the use of Internet based applications in an environment of illiteracy or non familiarity with English. Applications developed on the basis of user friendly graphics would go a long way to meet this requirement. Use of vernacular language will help since familiarity with English in rural areas is low. Rather than only attempting transliteration based on appropriate software, encouragement to local entrepreneurs to add value to such application programmes in vernacular through fiscal incentives including local and central tax benefits will be more desirable.

5.33 Do you perceive need for any regulatory or licensing change to boost broadband penetration? (Reference Para 4.71)

- A major policy initiative needed from the government is immediate permission to ISPs to offer VoIP services. The mistaken impression about VoIP services leading to financial problems to UASL operator is indeed just that – a mistaken threat where there is none because the price differential between normal calls and VoIP calls has rapidly diminished.
- Proposal in some quarters that ISPs be made to pay huge license fees to be permitted to offer VoIP services (through a - entry fee). This would appear to be

5.34 Are there any specific competition and market related issues that are hindering growth of broadband? (Reference Para 4.71)

Non availability of resources on wholesale prices for ISPs from UASL

Restriction on provision on IP base applications / services such as IPTV and Un-restricted Internet Telephony to the ISPs which could be bundled with Broadband connection and shall be immensely useful rather value for money for the large population including rural

5.35 What other fiscal/non-fiscal measures should be considered to boost broadband penetration? (Reference Para 4.71)

Fiscal Measures

- We must agree on certain key attributes and objectives to be used as the basic criteria for broadband to be classified as a 'key infrastructure' in the true sense. It would be appropriate to extend the Income Tax benefits under section 80 (I) (A) to ISPs and other licensees who are authorized to provide Internet and Broadband access.
- The Government of India should also recommend to all State Governments to waive sales tax on goods and services that are transacted through electronic mode (e-commerce) for the next 5 years up to limits to be prescribed by the Government. This recommendation should be then followed with legislation to ensure execution by the State Governments.

- A similar recommendation or legislation should also go from the Government of India to the State Governments to waive Entertainment Tax, currently approximately 30% in certain states, levied on broadband subscriptions and entertainment services, if they are provided through a broadband or internet platform.

- Broadband services should be exempted from Service Tax and AGR and proposed Unified License fee offered by any Service Providers.

- USOF should be used in subsedizing CPE, Bandwidth and rural infrastructure. It should be available to all service providers capable of providing broadband services in rural areas.

- Full depreciation should be allowed within first year on PC, CPE and Security / Monitoring equipment installed by Service Providers.

- One PC upto Rs. 30K and/or Laptop (upto Rs. 45 K) should be exempted from the Income of the individual and self employed on the production of valid Invoice.

  All corporations, whether public or private, should be allowed to give Rs. 9600 per annum allowance to employees for broadband services access at home. This allowance should be removed from taxable income for the corporation. The same facility should be extended to self-employed and individuals.

Non-fiscal measurers

- Remove entry barriers faced by ISPs in providing a full bouquet of data and Internet based services including internet telephony, IPTV and all related services.

- Ensure fair competition between telecom access providers and ISPs by mandating that telecom operators undertake effective functional separation of their ISP business from their telephony business.

- Mandate that BSNL and other access service providers sell bandwidth and leased lines to ISPs at non discriminatory wholesale prices. Retail minus formula may be adopted while offering such services to ISPs.

- Sharing of Infrastructure by ISPs with other Service Providers.
- Facilitate ISPs in innovating and expanding services provided by them to end users.
- USO fund should be available to ISPs who wish to provide Internet/Broadband Services in the rural/semi-rural areas.
- While making or amending or streamlining any policy / regulation Govt must ensure that interest of existing ISPs should not be affected.

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